

DD1362 prog 21

$$L^0 = \{\epsilon\}$$

$$L^{k+1} = L L^k$$

$$L^* = \bigcup_k L^k$$

Example: $L = \{ab, bb\}$ $\Sigma = \{a, b\}$

$LL = \{abbb, abab, bbab, bbbb\}$

$$L^0 = \{\epsilon\}$$

$$L^1 = L L^0 = \{uv \mid u \in L \wedge v \in \underbrace{\{\epsilon\}}_{L^0}\}$$

$$= \{uv \mid u \in L \wedge v = \epsilon\}$$

$$= \{u \mid u \in L\} = L$$

$$\Rightarrow L^1 = L$$

$$L^2 = L L^1 = L L = \dots$$

$$L^3 = LL^2 = L(LL)$$

$$= \{ababbb, bbbbbb, \dots\}$$

$$L^* = \bigcup_k L^k$$

Kleene star